

TEXAS DEPARTMENT OF HEALTH - BUREAU OF RADIATION CONTROL

ADDITIONAL INFORMATION FOR REGISTRATION OF ACCELERATOR (S)

A Certificate of Registration authorizing operation of an accelerator must be received by your facility **prior to** operation. This includes the initial beam on and commissioning of the accelerator.

Completion of the attached form will assist the Bureau of Radiation Control in evaluating your request for registration of your accelerator. (See 25 Texas Administrative Code(TAC) §289.226 and §289.229)
In addition to this form, the following must be submitted:

- Diagram of floor plan of the accelerator vault and surrounding areas
- Shielding calculations
- Operating and safety procedures

For a medical registration you must also submit physician(s) qualifications (training and experience)

In order to correctly complete the shielding calculation form, note the following:

Workload - The degree of use of the x-ray unit stated in terms of the weekly exposure of the useful beam at one meter from the source. (Rm^2)

Barrier Name - This should be the name given to the individual barrier. (example: Barrier 1, Barrier A, etc.). Indicate barrier name on copy of room design submitted. Include information for the ceiling and floor as applicable.

P/S - Is the barrier a primary (P) or a secondary (S) barrier?

Primary (P) - Is a radiation protective barrier that may be struck by the main or useful beam of radiation.

Secondary (S) - Is a radiation protective barrier, which may *not* be struck by the useful beam of radiation, but only by leakage and/or scattered radiation.

U/C - Is the area uncontrolled (U) or controlled (C)?

Controlled (C) - Is an area, which requires control of access, occupancy, and working conditions for radiation protection purposes.

Uncontrolled (U) - Is any area which does **not** meet the requirements of a controlled area.

U - Use Factor - The expected fraction of the workload during which the appropriate beam of radiation may strike the barrier in question. NOTE: For a secondary barrier (U) is always 1.

T - Occupancy Factor - The maximum fraction of time during which the area shielded by the barrier in question may be occupied by a person.

Distance - Primary - The distance in meters from the isocenter to the point of incidence on the primary barrier.

Distance - Secondary - The distance in meters from the isocenter to the point of incidence on the secondary barrier.

Include information for the ceiling and floor.

ACCELERATOR SHIELDING CALCULATIONS

Facility Name: _____

Room Name: _____

Workload: _____ Rm²/week

Voltage: _____ MV

Registration Number: _____

LABEL BARRIER NAME ON COPY OF ROOM DESIGN SUBMITTED

<u>Barrier Name:</u>	circle - Primary	/	Secondary
	circle - Controlled	/	Uncontrolled

Use Factor _____

Occupancy Factor _____

Distance to Primary Barrier _____ meters

Distance to Secondary Barrier _____ meters

Thickness of Barrier _____ cm

Type of Barrier Material:

circle - Pb concrete iron *other (specify) _____
include tenth value layer thickness

<u>Barrier Name:</u>	circle - Primary	/	Secondary
	circle - Controlled	/	Uncontrolled

Use Factor _____

Occupancy Factor _____

Distance to Primary Barrier _____ meters

Distance to Secondary Barrier _____ meters

Thickness of Barrier _____ cm

Type of Barrier Material:

circle - Pb concrete iron *other (specify) _____
include tenth value layer thickness

<u>Barrier Name:</u>	circle - Primary	/	Secondary
	circle - Controlled	/	Uncontrolled

Use Factor _____

Occupancy Factor _____

Distance to Primary Barrier _____ meters

Distance to Secondary Barrier _____ meters

Thickness of Barrier _____ cm

Type of Barrier Material:

circle - Pb concrete iron *other(specify) _____
include tenth value layer thickness

*If materials other than those listed are recommended, the tenth-value thickness at the appropriate energy must be entered.

Additional copies of this form may be made as necessary.

Barrier Name: circle - Primary / Secondary
circle - Controlled / Uncontrolled

Use Factor _____

Occupancy Factor _____

Distance to Primary Barrier _____ meters

Distance to Secondary Barrier _____ meters

Thickness of Barrier _____ cm

Type of Barrier Material:

circle - Pb concrete iron *other(specify) _____
include tenth value layer thickness

Barrier Name: circle - Primary / Secondary
circle - Controlled / Uncontrolled

Use Factor _____

Occupancy Factor _____

Distance to Primary Barrier _____ meters

Distance to Secondary Barrier _____ meters

Thickness of Barrier _____ cm

Type of Barrier Material:

circle - Pb concrete iron *other(specify) _____
include tenth value layer thickness

Barrier Name: Ceiling circle - Primary / Secondary
circle - Controlled / Uncontrolled

Use Factor _____

Occupancy Factor _____

Distance to Primary Barrier _____ meters

Distance to Secondary Barrier _____ meters

Thickness of Barrier _____ cm

Type of Barrier Material:

circle - Pb concrete iron *other(specify) _____
include tenth value layer thickness

Barrier Name: Floor (if applicable) circle - Primary / Secondary
circle - Controlled / Uncontrolled

Use Factor _____

Occupancy Factor _____

Distance to Primary Barrier _____ meters

Distance to Secondary Barrier _____ meters

Thickness of Barrier _____ cm

Type of Barrier Material:

circle - Pb concrete iron *other(specify) _____
include tenth value layer thickness
